

**Carquinez Straits Project
Maritime Archaeology**

**Report of Two Remnant Wharf Features
East of the Benicia-Martinez Bridge**

**Prepared for:
Parsons Transportation Group
San Francisco, California
and
Caltrans District 4
Oakland, California**

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Orinda, California
July 2000**

On June 27, 2000, archaeologists from William Self Associates documented the remains of two deteriorated wharf structures east of the Southern Pacific Railroad Bridge, which is situated immediately east of the Benicia-Martinez Bridge. Both wharf structures, designated as the eastern and western structures respectively, were observed during remote sensing surveys conducted as part of the Carquinez Straits Project but could not be documented until a smaller, more maneuverable boat could be deployed.

Western Wharf Structure

The remains of the western feature comprise the piles and a remnant of the wharf built by the Mountain Copper Company (MoCoCo), formerly located on the property now owned by Rhodia, Inc. (Photos 1 and 2). The wharf's remains lie 250 to 300 feet east of the railroad bridge and comprise two distinct sections. The southern section is the remains of a projecting pier, and the northern section appears to be the piles remaining from the perpendicular pier that once formed its head. No evidence of the pier or its supporting piles was evident on the shoreline itself. From the shoreline, 16 wood piles, each approximately 13 inches in diameter, extend for a distance of approximately 160 feet along a 340 degree azimuth (Photo 3). The crossheads and all supporting structural members are missing from the first 10 piles. Of those piles, six are aligned in pairs and four appear to be the remaining pile of what was once a pair. Two of these single piles are broken off at the waterline and are nearly submerged (Figure 1). The end of the southern section consists of a pair of piles, separated by a distance of 28 feet. Each pair comprises three individual piles, two of which are situated side-by-side on the eastern side (refer to Photo 3). A crosshead supporting two parallel joists spans the width of each pair. The joists, in turn, provide support for the remains of the wharf surface itself, consisting of 20 wood planks, aligned perpendicular to the joists and parallel to the crossheads (Photo 4).

The northern section of the feature is situated approximately 270 feet north of the wharf remnant. It is aligned along an azimuth of 68 degrees and comprises eight pilings, three of which are individual piles that appear to be the remains of a pair, one pair of piles, and three piles clustered together to form what once may have been a dolphin¹ (Photo 5). No crossheads or supporting structural members remain on the northern portion of the feature.

¹ A dolphin is a cluster of piles that provides mooring for vessels.

Figure 2 provides an illustration of the location of the western wharf feature superimposed on the USGS Vine Hill 7.5-minute Quad. Handheld GPS readings were taken at three locations along the feature's alignment as indicated in Figure 1. These were used to determine the location and alignment of the feature on the topo map. The datum used for calculating these locations was NAD27 and, although the GPS was not differentially corrected, the estimated positioning error was only ± 14 feet.

Eastern Wharf Structure

The eastern feature comprises the remains of three sections of a wood pier that form an arc from a point on the shoreline approximately 1100 feet east of the railroad bridge to a point approximately 860 feet east of the bridge (Figure 3). Evidence of the wharf was found onshore in the form of pile sets with intact crossheads and cross-bracing. These sets extend landward a considerable distance to the south.

The southern section of the feature, that part in the water closest to shore, comprises 16 piles, all but one of which are broken off at the waterline and nearly submerged (Photo 6). The piles are arranged in five sets that are separated from each other by approximately 15 feet. Three piles form each of four sets; four piles form the fifth set. The piles in each set are aligned side-by-side along an east-west axis. No crossheads or supporting structural members are visible above the waterline. The entire southern portion of the feature projects from the shoreline approximately 60 feet along an azimuth of 10 degrees.

The central section of the feature is approximately 120 feet long and curves some 20 degrees along a gentle arc to the northwest. It comprises nine sets of 13 inch diameter wood pilings, all of which retain their horizontal cross heads and most of which still have remnants of their cross-supports still attached (Photos 7 & 8, and Figure 4). The piles forming each set are spaced on centers of approximately 6.5 feet, and the sets are separated from each other by distances ranging from 14 feet 9 inches to 15 feet 2 inches. The remnant of a single joist spans the distance between the second and third pile sets, and another spans the distance between the third and fourth set. Unlike the other seven pile sets in the central section, three piles form the last two sets, although the overall width of these sets is the same as that of the other seven.

The western section, forming the end of the feature, begins approximately 50 feet west of the end of the central section. Twenty-six wood piles, each approximately 13 inches in diameter comprise this portion of the feature (Photos 9 & 10). A single wood pile,

broken at the waterline and nearly submerged marks the beginning of this section. The remaining 25 piles are arranged in sets. Nine of these form a gentle curve that is aligned nearly due west. Like the central section, the piles in each set are spaced on centers of 6.5 feet, and distances of approximately 15 feet separate the sets from each other. Seven of the pile sets are formed by pairs of wood piles, two sets are formed of three evenly-spaced piles, and one pile appears to be the remains of what once was a pair. Five of the pile sets retain their crossheads and a single joist spans the distance between the first four pairs, running along the south side of each. Between the third and fourth of these sets, two more joists span the north side and support the fragmentary remains of the wharf's wood-plank surface.

The remaining pile sets continue to the west and terminate in the last pair retaining a crosshead timber. Two more piles, situated side-by-side, are positioned immediately northeast of this set.

At this point, the wharf appears to have originally turned sharply to the south, as two pile sets are oriented in this direction. Like the others, these last two sets are separated from the previous pile set and from each other by approximately 15 feet. The piles comprising each set, however, are set on centers of 13 feet and 15 feet respectively, over twice the distance found in all other pile sets in the entire feature. The remains of a cross member spans the width of the last pile set.

Figure 5 illustrates the location of the eastern wharf feature on the USGS Vine Hill 7.5-minute Quad. Handheld GPS readings were taken at five locations along the feature's alignment as indicated in Figure 3. These were used to determine the location and alignment of the feature on the topo map. The datum used for calculating these locations was NAD27 and although the GPS was not differentially corrected, the estimated positioning error was ± 14 feet.

The configuration and size of the entire east feature differs from that of the MoCoCo wharf feature to the west. The surface of the eastern wharf appears to have been at a higher elevation, the pile sets were built on centers of wider spacing (6.5 ft compared to the 4 ft centers of the MoCoCo wharf), and the spacing between the pile sets is consistently in the range of 15 feet, compared to that of the MoCoCo sets which varies between 11 and 29.5 ft. However, as depicted in photo 11, historically, a second wharf was situated at the eastern edge of the MoCoCo property (the wharf depicted in photos 1 and 2 is barely visible above the long roofline in the right center of the picture). It is

surmised that this second wharf was probably also owned by MoCoCo. The east wharf feature described above is likely the remains of this second wharf.

Pipeline Corridor

At the request of Caltrans, information pertaining to the location of the Santa Fe Pacific Pipeline Company (SFPP) pipeline corridor is included in this report. Although neither a maritime nor historical feature, evidence of the corridor was observed in remote sensing operations conducted by William Self Associates and Sea Surveyor, Inc. of Benicia California. The corridor is situated within the project APE and is roughly parallel to the existing railroad bridge, lying approximately 200 feet to the east of the bridge at the southern shore of the Strait and approximately 375 east of the bridge at the northern shore. The alignment and coordinates for the corridor are provided in Figure 6. It is recommended that Caltrans coordinate closely with Mr. Don Quinn, Relocations Manager at Kinder Morgan Energy Partners, L.P. (parent company of SFPP) as to the exact location of the petroleum pipeline. Mr. Quinn may be contacted at 714-560-4940.

References

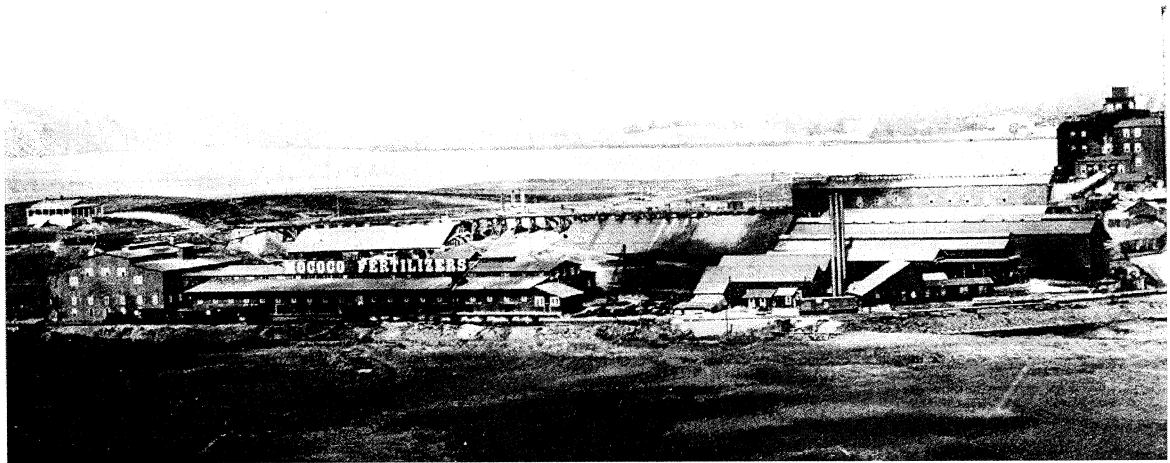
Perry, Charlene

1986 "Martinez: A Commercial and Industrial Center" in *Martinez: A California Town*. Martinez: RSI Publications.

Tatam, Robert Daras

1993 *Old Times in Contra Costa. A Journey to the Past*. Pittsburg: Highland Publishers.

Photos



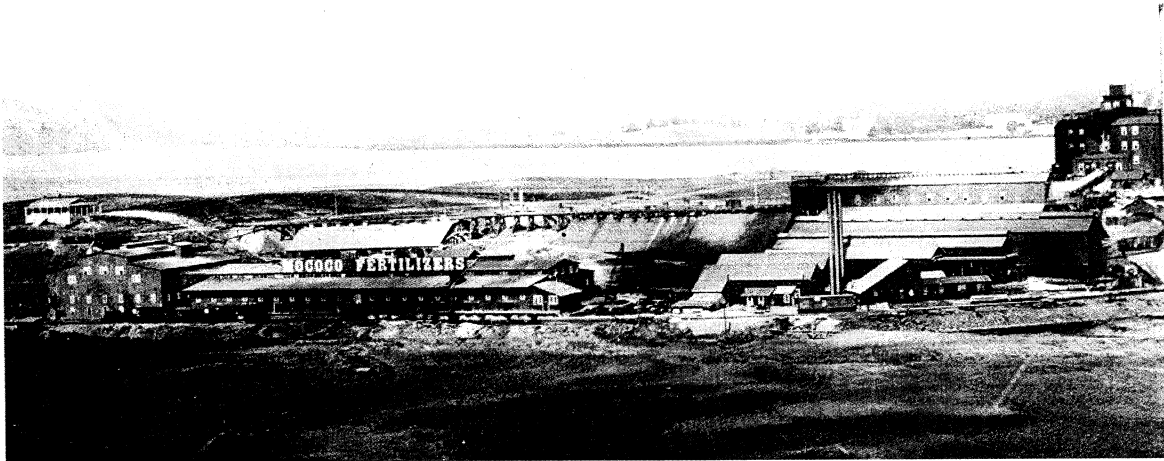
Mountain Copper Company ca. 1909 (Perry 1986: 26)



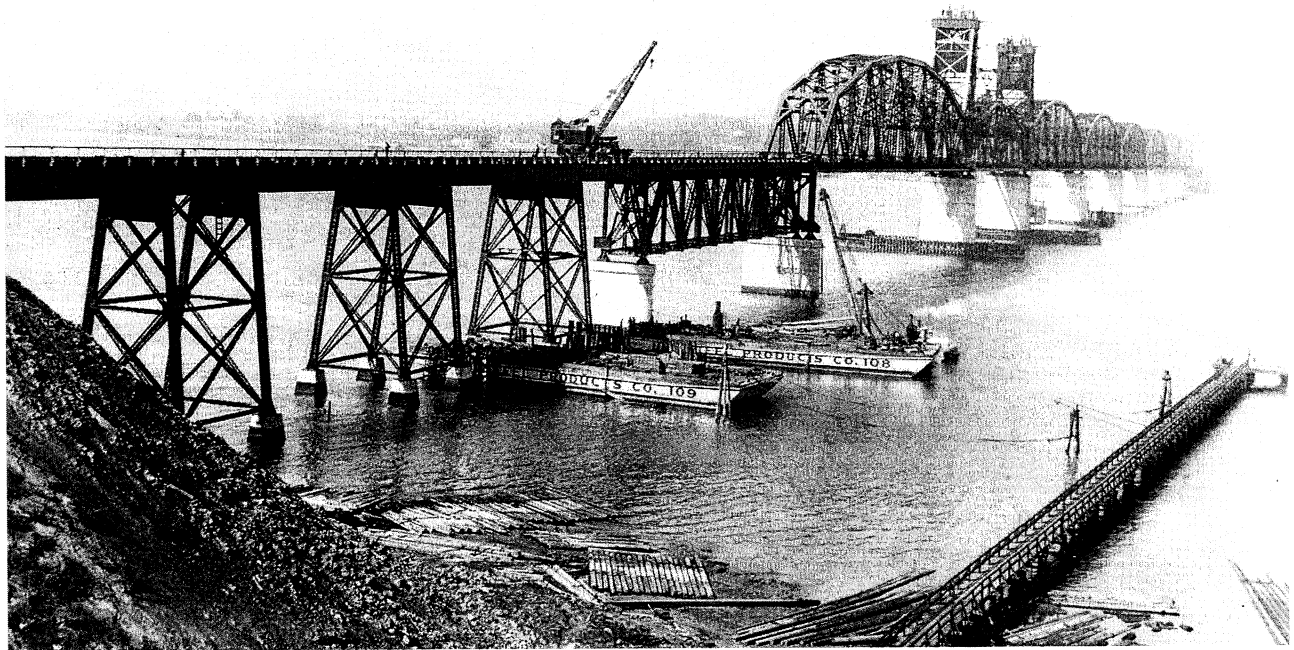
Mountain Copper Company Wharf ca. 1930 (Tatum 1993:23)

Photos 1 and 2

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Mountain Copper Company ca. 1909 (Perry 1986: 26)



Mountain Copper Company Wharf ca. 1930 (Tatum 1993:23)

Photos 1 and 2

Carquinez Straits
Project

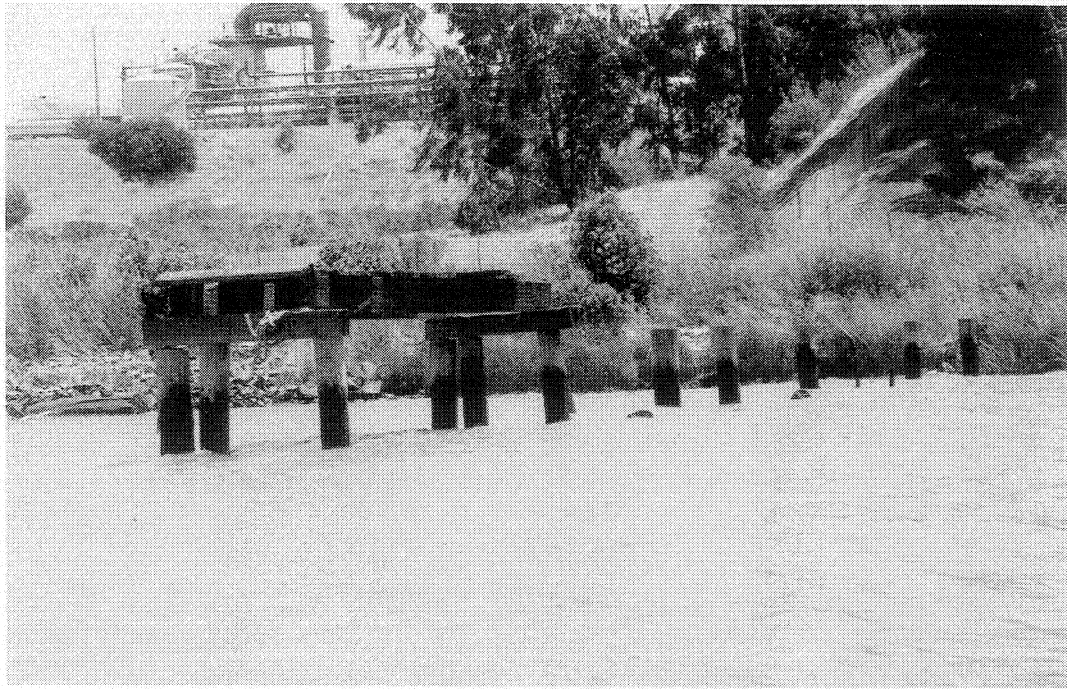


Photo 3: Southern Section of West Wharf Feature (MoCoCo Wharf), View Southeast

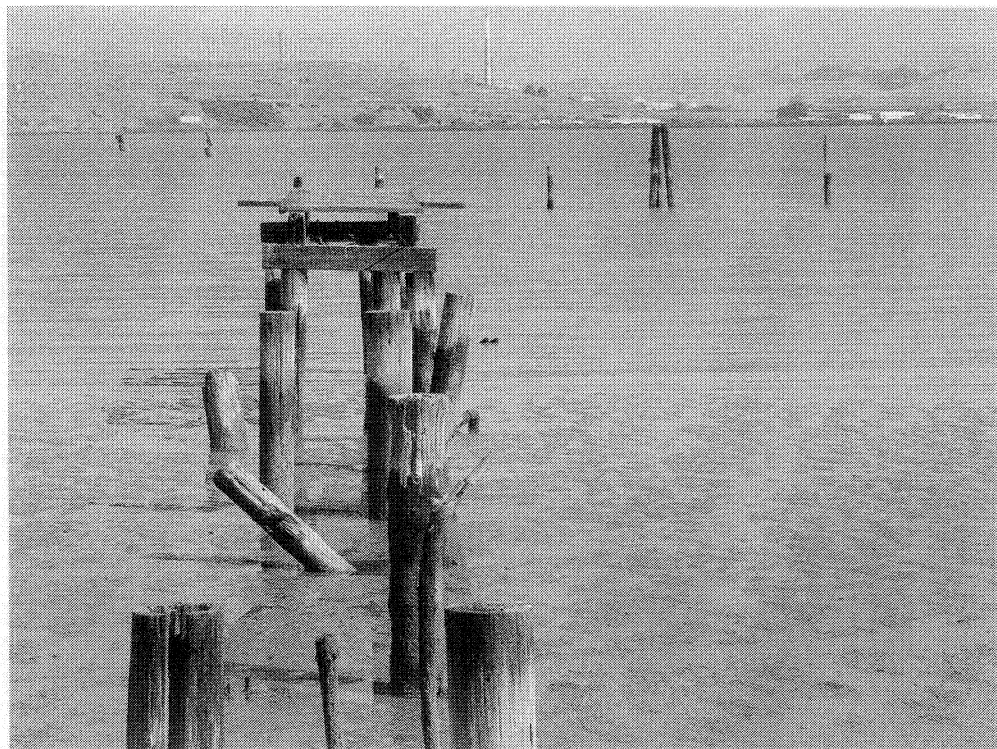


Photo 4: Southern Section of West Wharf Feature (MoCoCo Wharf), View North

Photos 3 and 4

**Carquinez Straits
Project**

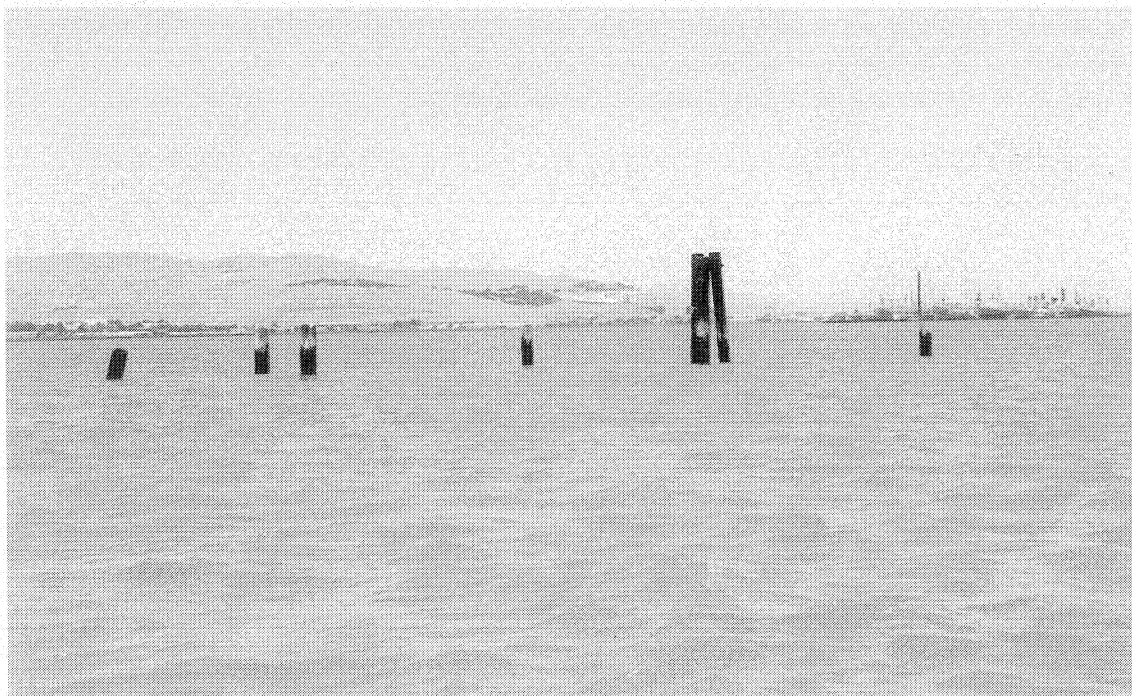


Photo 5: North Section of MoCoCo Wharf. View North



Photo 6: Southern Portion of Eastern Wharf Feature. View Southeast

Photos 5 and 6

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Photo 7: Central Portion of Eastern Wharf Feature. View Northeast

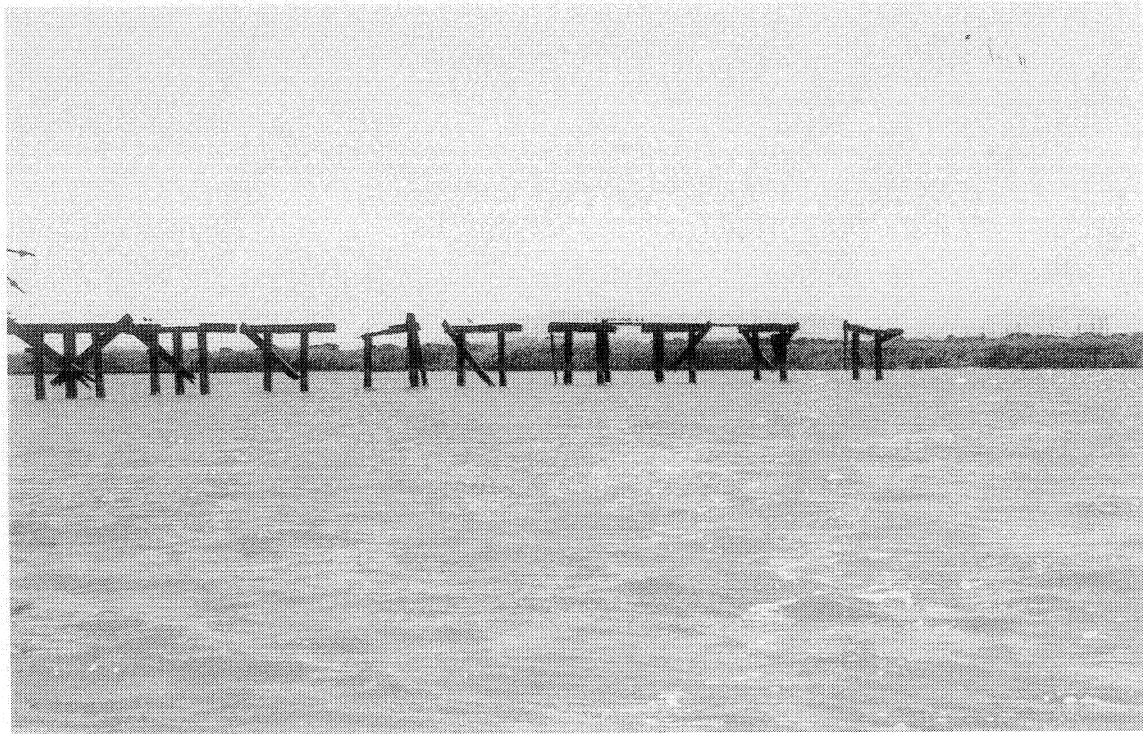


Photo 8: Central Portion of Eastern Wharf Feature. View Southeast

Photos 7 and 8

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Photo 9: Western (terminal) Portion of Eastern Wharf Feature. View North



Photo 10: Western and Central Portion of Eastern Wharf Feature. View West

Photos 9 and 10

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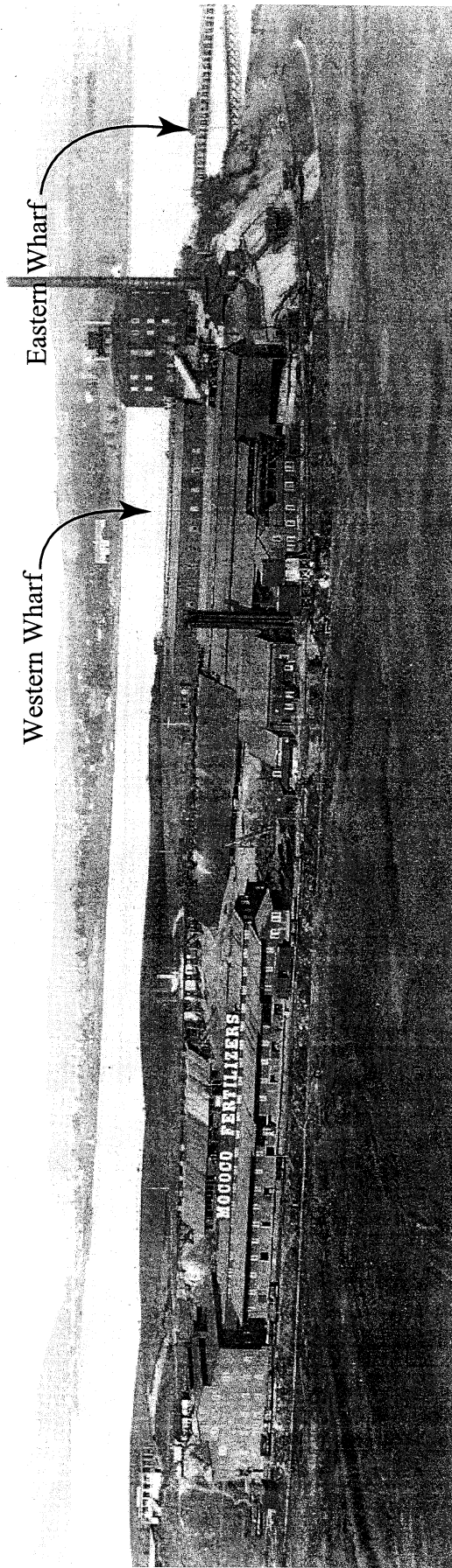
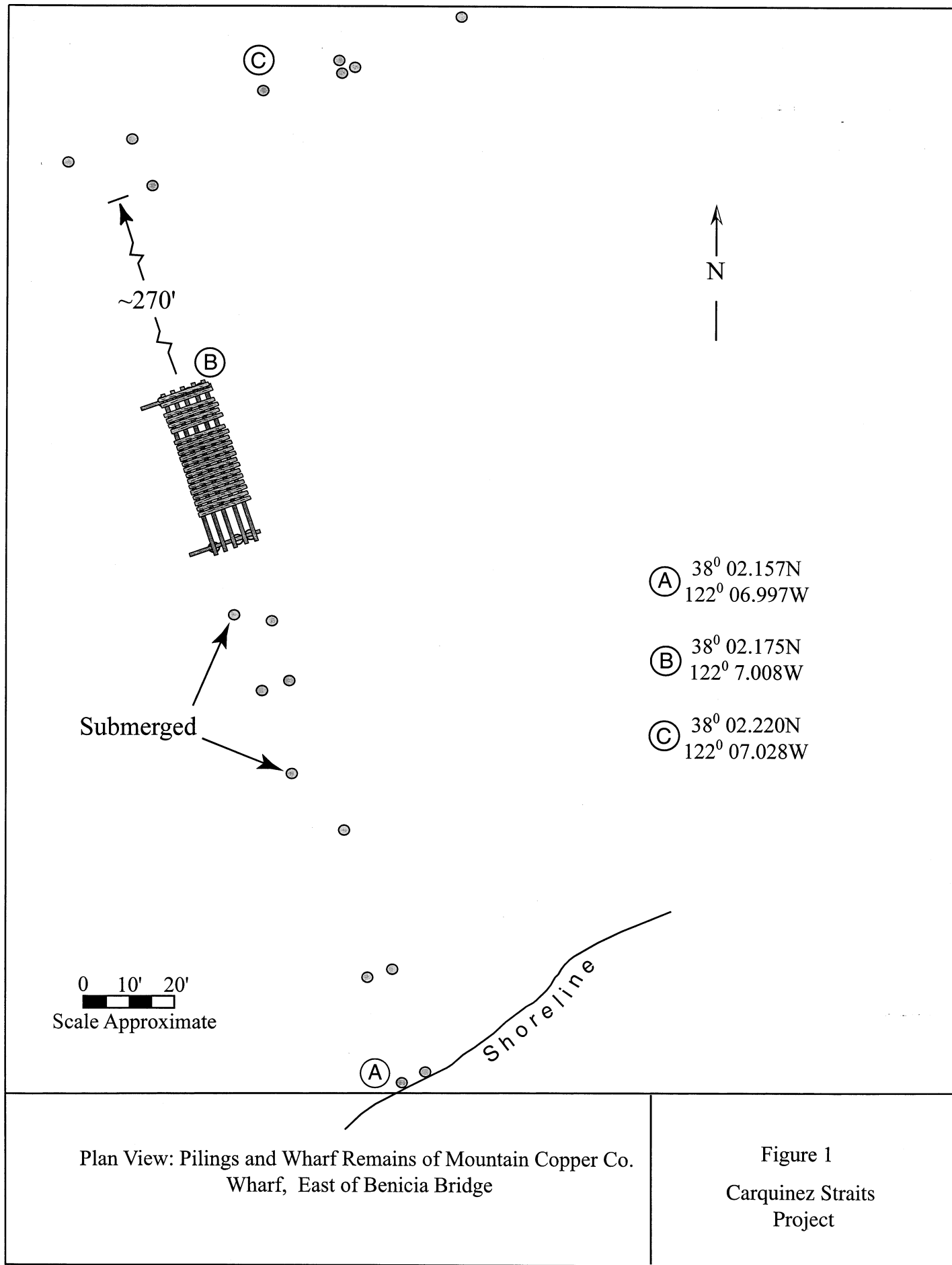
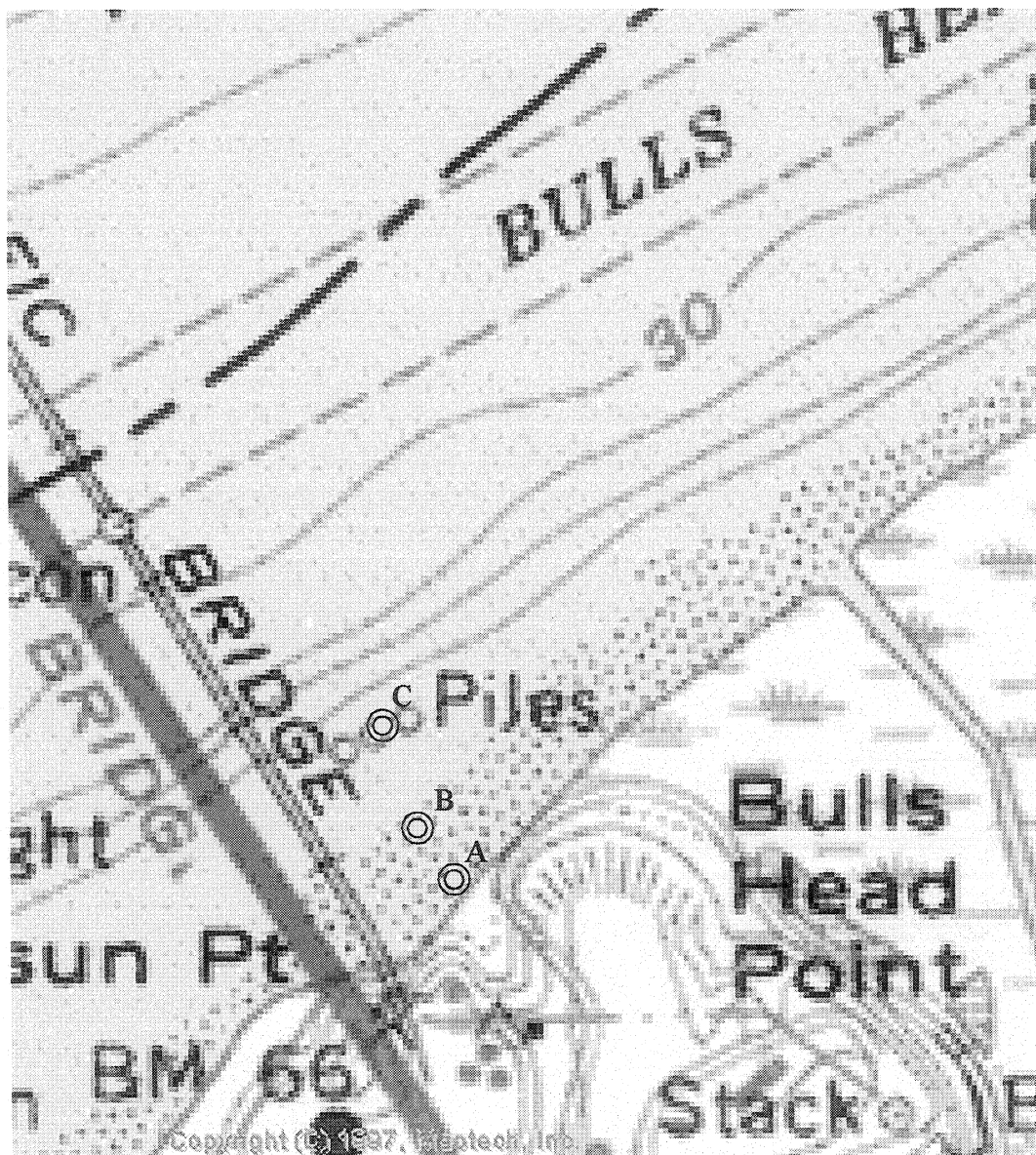


Photo 11: Mountain Copper Company (no date) (Tatam 1993:18)

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Figures

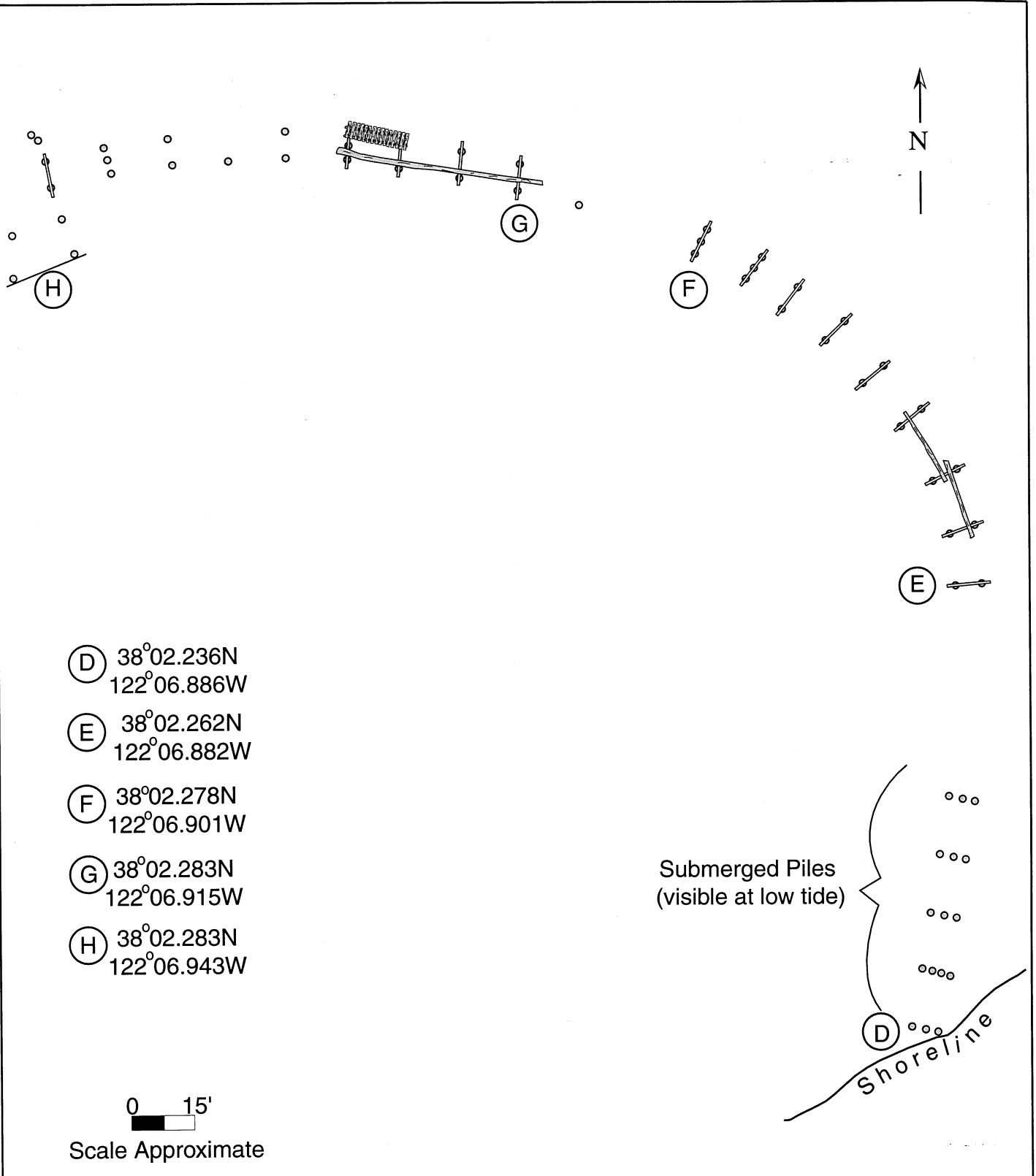




⊙ Location of Lat/Lon Coordinates

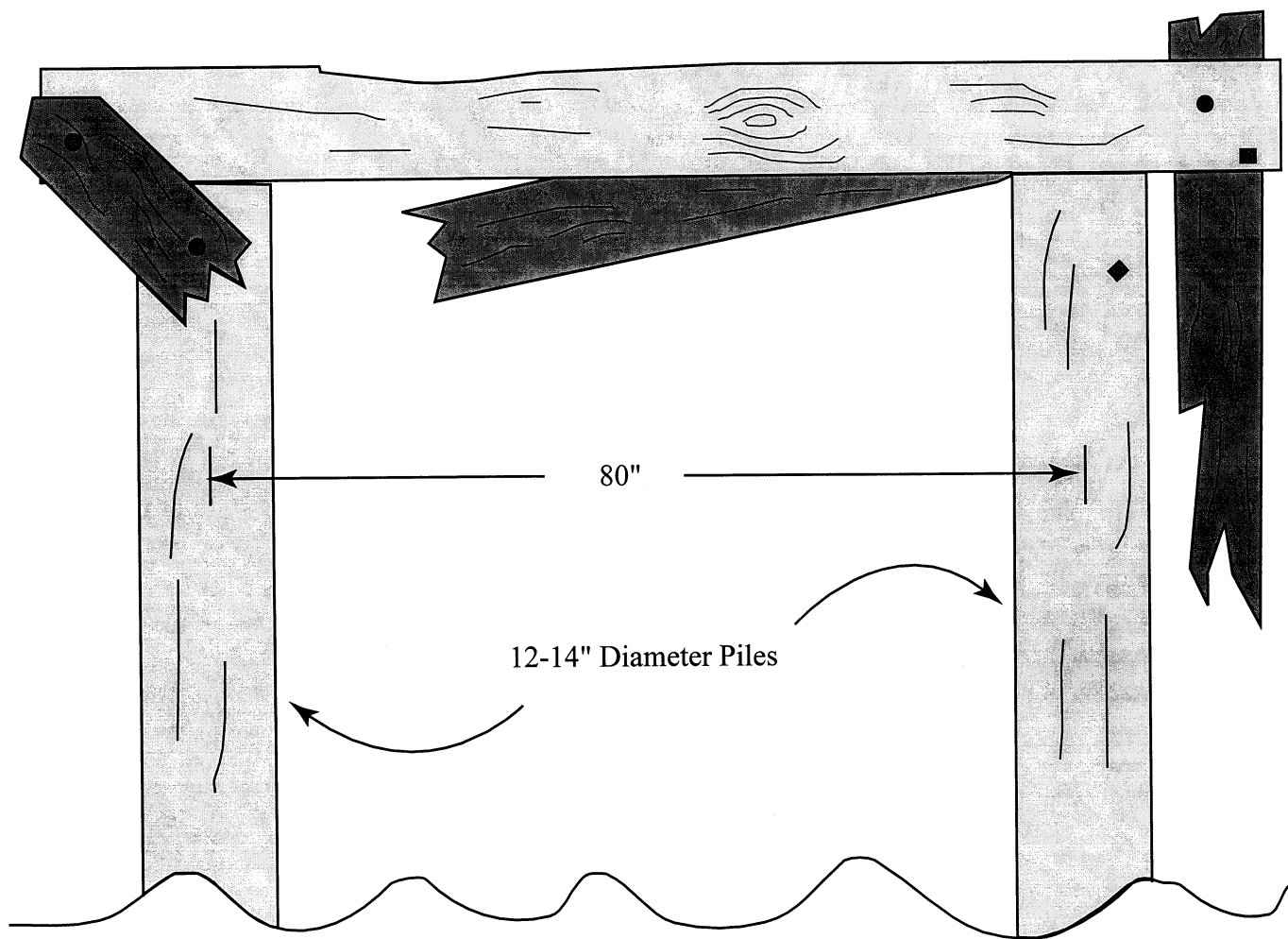
Location of Coordinates for Remains
of MoCoCo Wharf
USGS 7.5' Topographic Map
Vine Hill Quad 1959 (1980)

Figure 2
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Plan View: Pile Arrangement of Eastern Wharf Feature
East of Benicia Bridge

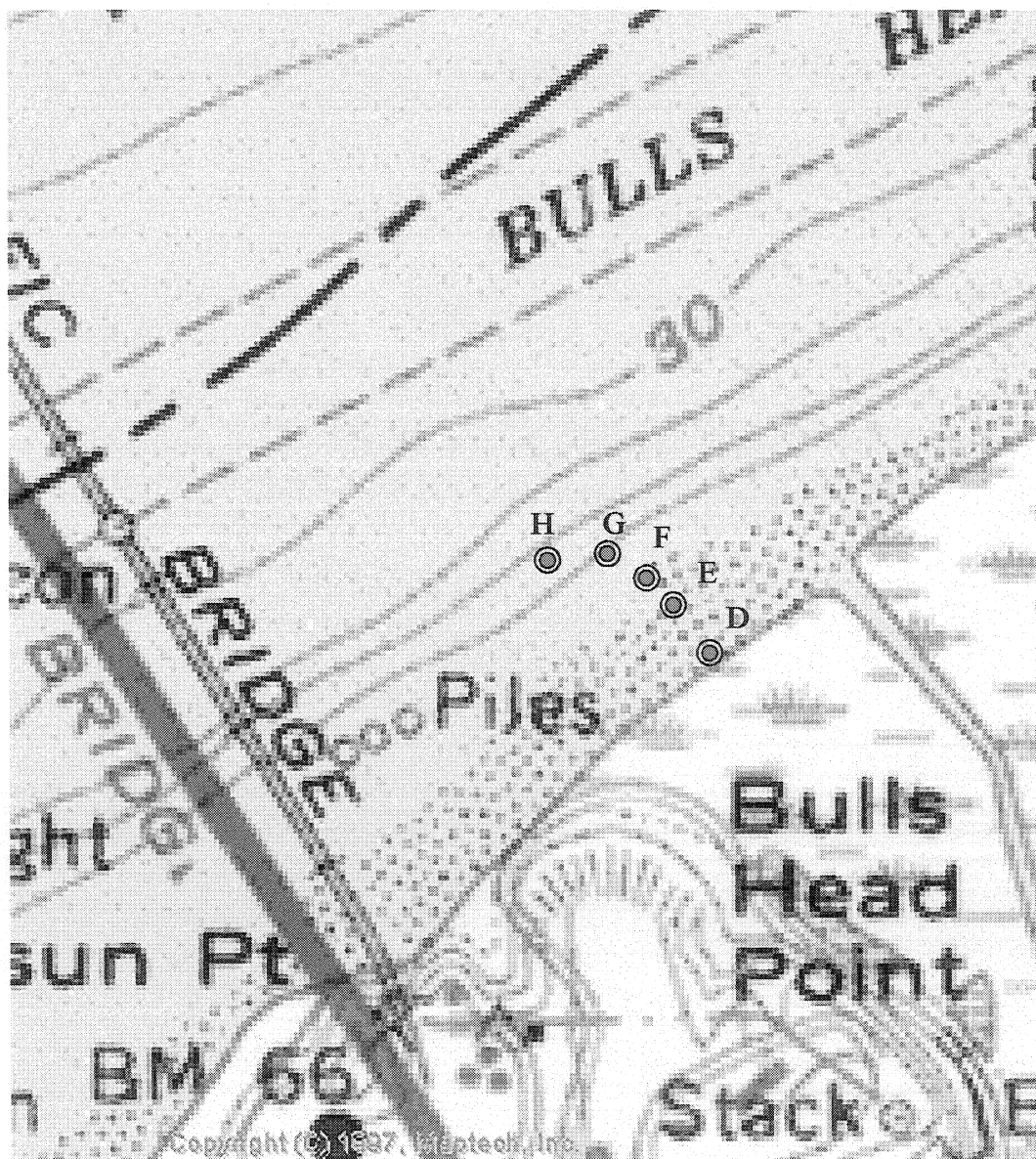
Figure 3
Carquinez Straits
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0 12"
 Scale Approximate

Typical Configuration of Pile Set

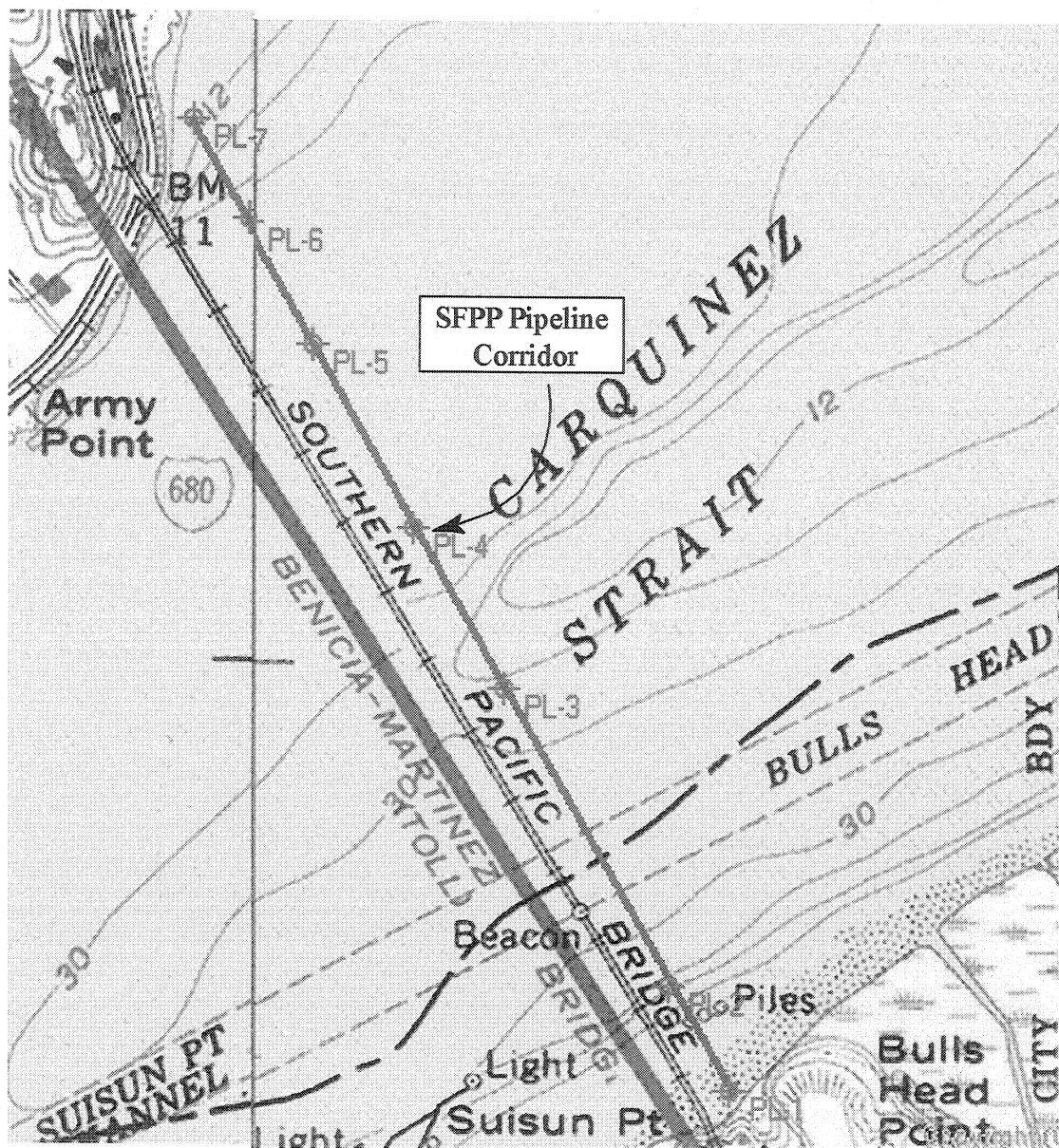
Figure 4
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● Location of Lat/Lon Coordinates

Location of East Pile Array Coordinates
USGS 7.5' Topographic Map
Vine Hill Quad 1959 (1980)

Figure 5
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Nad-83

Pipeline Coordinates

Cal. Zone 2, NAD-27

	Lat.	Lon.
PL-1	38° 02' 8.714"	122° 07' 4.256"
PL-2	38° 02' 13.757"	122° 07' 8.004"
PL-3	38° 02' 28.323"	122° 07' 18.239"
PL-4	38° 02' 36.120"	122° 07' 23.805"
PL-5	38° 02' 45.162"	122° 07' 30.165"
PL-6	38° 02' 51.128"	122° 07' 34.251"
PL-7	38° 02' 55.943"	122° 07' 37.684"

	Easting (meters)	Northing (meters)
PL-1	599,348.7	40,986.8
PL-2	599,257.5	41,142.4
PL-3	599,008.5	41,591.9
PL-4	598,873.1	41,832.5
PL-5	598,718.4	42,111.5
PL-6	598,619.0	42,295.6
PL-7	598,535.5	42,444.2

Location of East Pile Array Coordinates
USGS 7.5' Topographic Map
Vine Hill Quad 1959 (1980)

Figure 6
Carquinez Straits
Project